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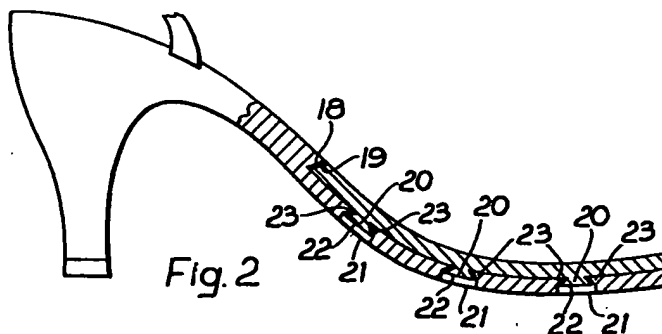
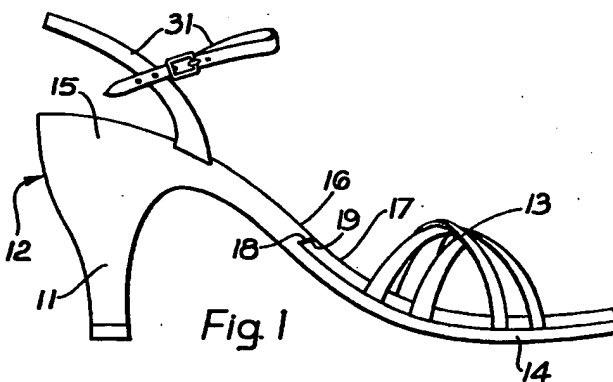
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GB 1473358 GB 1446769 GB 0904204  
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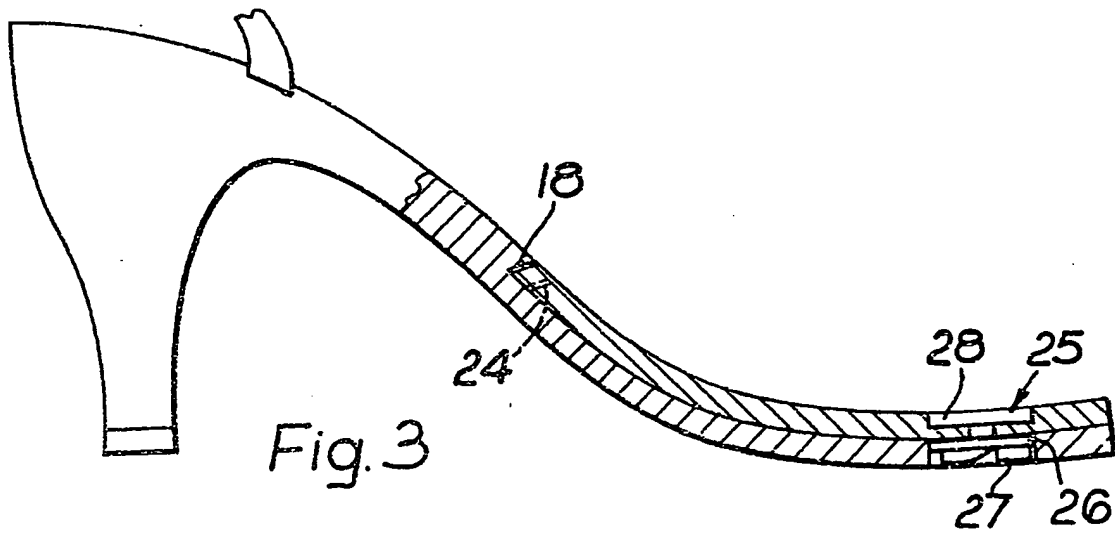
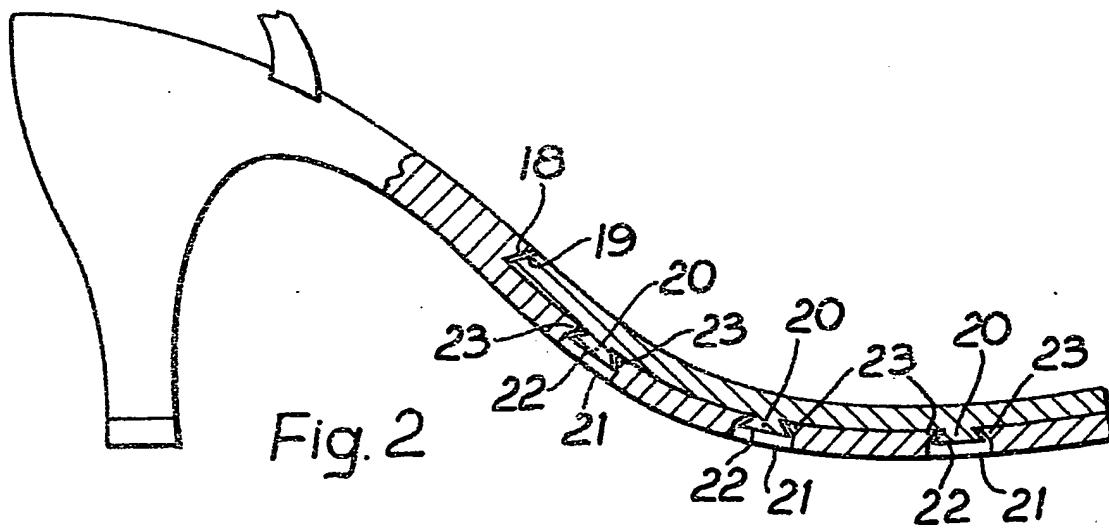
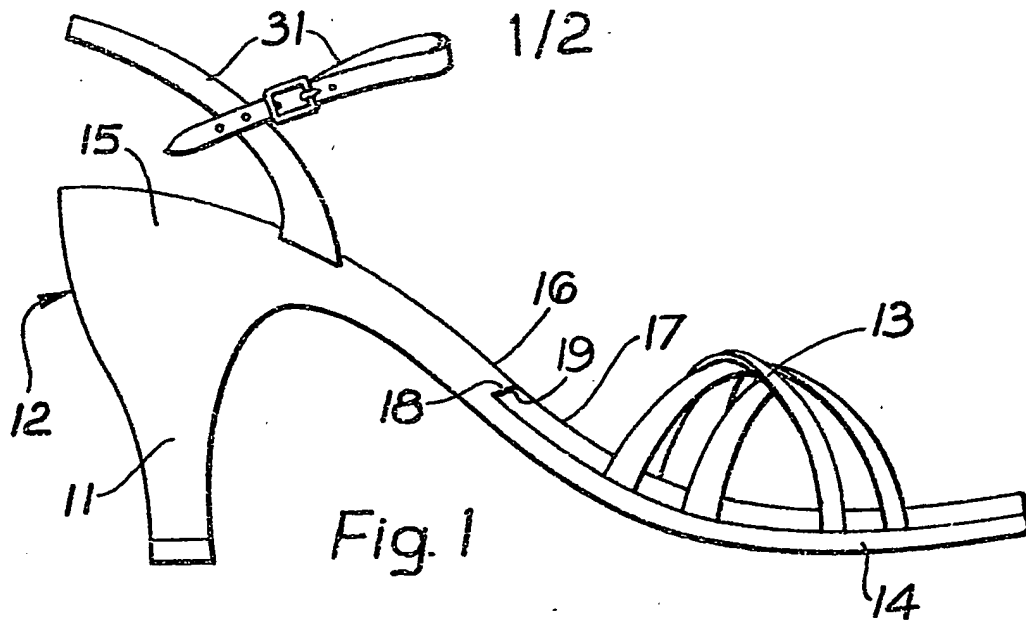
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(54) Footwear

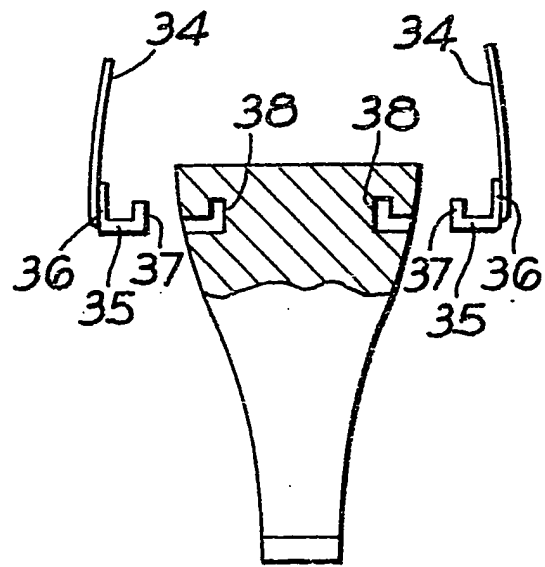
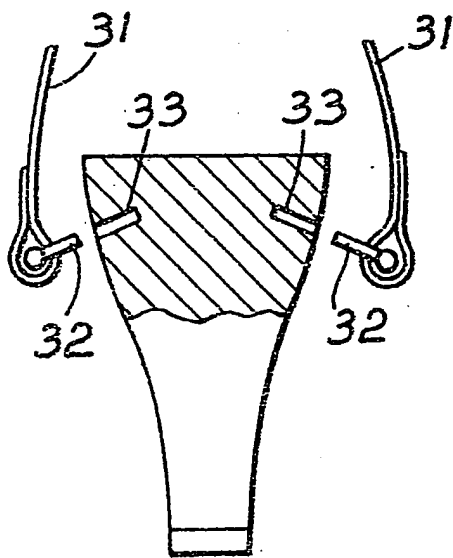
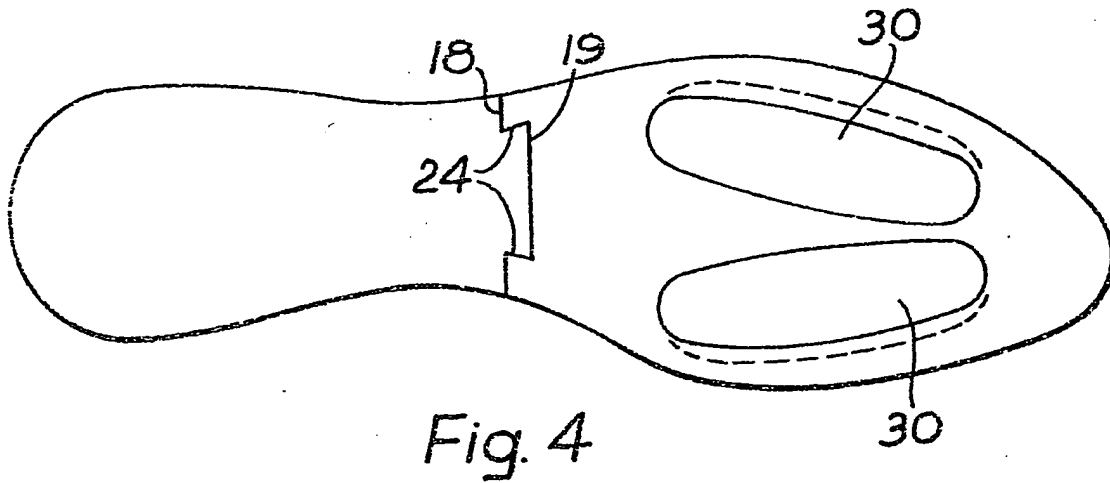
(57) An item of footwear particularly a lady's evening shoe with replaceable uppers has an instep part 13 of the upper permanently secured to a part insole 17. A main part of the shoe, the substructure 11, has a raised heel platform 16 with which the part insole 17 is substantially flush. Various ways of securing the part insole 17 to the substructure 11 are described with the securing means penetrating the substructure. Ways of attaching a separate heel part of an upper, if desired, are described.



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## SPECIFICATION

## Footwear

5 The present invention concerns footwear particularly shoes for ladies which consist of a sole-and-heel portion and uppers consisting of straps.

With such shoes there is a recognised need for having the ability of changing the appearance by fitting replacement uppers. Many ways of achieving this have been proposed but none has met with commercial success. It will be appreciated that the problem of designing a shoe with removable uppers is a very difficult one since the uppers have to be capable of being removed easily by a lady but at the same time must not yield during wear which could lead to injury. Moreover, it is desired to keep the shoe attractive without making the shoe look clumsy.

Of the ideas that have been proposed, mention can be made of the following British patents:—

- 1) 1 232 321 wherein the uppers are attached by a sliding clasp fastener,
- 2) 467 247 wherein the uppers are attached by press-studs,
- 3) 1 446 769 wherein the uppers are trapped between two members which are connected by resilient tongues, and
- 4) 904 202 wherein the uppers are attached to an insole containing an elastic part between the heel and sole parts which are attached to the substructure by keyhole slots and pegs.

None of the prior proposals have been able to combine the desirable features of safety in wear, comfort in wear, low manufacturing cost, an attractive appearance and in particular a thin sole at the front of the shoe, and ease of replacing uppers without risking fatigue failure of the fasteners.

For the sake of clarity, it is felt desirable to specify terms to be used hereforth. A substructure is the main part of the shoe comprising heel and sole parts for ground abutment directly or possibly through a wear-taking layer attached underneath. Sole will be used to mean the forward part of the shoe under the balls of feet. Heel will be used for the back part under the heel of the wearer. Insole or part insole is a member between the sole of a wearer and the substructure with in the present invention the insole or part insole not extending under the heel of the wearer. Instep is that part of the upper over the sole and heel part any part over the heel.

According to the present invention there is provided an article of footwear particularly a shoe for a lady which article consists of a substructure and an upper especially of straps in which the substructure has a raised heel platform and has secured to it a part insole flush with the raised platform, the instep of the upper being permanent permanently attached to the part insole and the part insole being securely but releasably attached to the substructure.

60 If desired a separate heel part can be provided releasably attached to the substructure. By having

separate instep and heel parts, the design problems are considerably eased.

As stated the invention is particularly concerned with ladies' shoes wherein the uppers consist of straps. These are usually evening shoes used for dances and parties and have high heels. One tendency is for the foot to slip down in a forward direction and this is resisted by the instep being permanently attached to the part insole and that being securely fastened with no risk of press-studs bursting as might occur with patent 467 247. Another tendency is for the wearer's heel to slip sideways, although ladies surprisingly wear high heel shoes without heel parts in safety, this is achieved by having the part insole non-rotationally secured as by it being held in abutment with the edge of the heel platform. Comfort and a thin combined thickness of the sole and part insole can be achieved by having the attachment means penetrating into substantially through holes in the sole part of the substructure and having the part insole rigid enough for the wearer not to feel the attachment means; evening shoes are not subjected to substantial wear and do not have to be water-proof. The use of the sole part as part of the attachment means dispenses with an extra component for this purpose and reduces manufacturing cost.

Other advantages will appear to those skilled in the art from the following description of three embodiments of the present invention given, by way of example, with reference to the accompanying drawings in which:—

Figure 1 is a side elevation of all three embodiments, Figure 2 is a section of Figure 1 of one embodiment,

95 Figure 3 is a section of Figure 1 of a second embodiment,

Figure 4 is a plan view on a substructure as used in figure 1 showing a third embodiment,

Figure 5 is an ancillary detail showing the attachment of a heel part,

Figure 6 is an ancillary detail showing another way of attaching a heel part.

Figure 1 shows a lady's evening shoe having a high heel 11 which is part of a substructure 12. This substructure has a sole part 14 and a heel part 15. The heel part is provided with a slightly raised platform 16 on which the heel of the wearer is to rest. An instep part 13 of an upper is sewn onto or otherwise permanently attached to a part insole 17 which is securely but releasably attached to the substructure by means which will be described later. The thickness of the insole is such that the top of the insole is flush with the top of the heel platform and the instep abuts the forward edge 18 with a chamfered edge 19 fitting under an overhang of the edge 18 in half-dove-tail-like manner.

Figure 2 shows a first attachment means. The part insole is moulded with a plurality of say three downwardly projecting protuberances 20. The substructure is moulded with complementary slots 21 extending from near the inside edge of the shoe to near the outside edge parallel or substantially so with

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the edge 18. The protuberances are near the outside edge of the insole and have enlarged heads 22 which co-operate with shoulders 23 running along the tops of the sides of the complementary slots except at the inside ends so that the protuberances can be inserted into the slots and slid along until the part insole is in registry with the substructure when the protuberances abut the ends of the slots. The heads are totally included in the slots and the shoulders are designed to be a tight frictional grip on the protuberances either on the sides of the protuberances or on the heads. The interface between the part insole and the substructure is designed to resist sliding of the part insole when a wearer's weight is on it either by selection of the coefficient of friction or by having barely perceptible undulations transversely of the slots.

The shoe in Figure 3 differs in the attachment means. The edges 18 and 19 are not straight but have complementary provisions 24 preventing relative sliding movement of the edges. The part insole can hinge down about these edges into register with the substructure. Towards the forward end of the part insole, there is a fastener 25. In its simplest form this fastener could be a peg attached to the part insole projecting into a hole in the substructure and retained therein by a spring, or stiffly pivotal or slidable, detent engaging a slot or slots in the peg; to remove the part insole, the shoe would be turned upside down and the detent manually disengaged by means of a suitable provision allowing the part insole to drop slightly so it can be gripped and slid off the substructure. However the fastener illustrated comprises a shallow mounting barrel 26 in the substructure in which a rotatable and slidable element 27 is carried, and a recessed bayonet-type fastener hole 28 in the part insole. The element is slidable between two audible-click detents (not shown) and can be turned to engage bayonet-type provisions on the element in the hole 28. Since only a single fastener is needed, the hole 28 can be disposed between the balls of the feet and the balls of the toes where it will not be sensed during wear. The arrangement is such that the element 27 is recessed or flush with the substructure when the element is depressed so the part insole can be slid off. However it would be possible to have a platform similar to the heel platform along the front of the shoe so the part insole is immovable in the substructure and is merely held down by the fastener and the half-dove-tail of the edges 18 and 19.

Figure 4 shows a plan view on a substructure in which the sole part is provided with two large slots 30 along the inside and outside of the shoe at an inclination to each other. These slots are to be engaged by protuberances similar to the protuberances of Figure 2 when the part insole is slid forwards. The edges 18 and 19 are disposed on the arch of the shoe (i.e. the piece of the substructure bridging between the sole part proper and the heel). To engage the part insole the arch is flexed and the part insole protuberances slid forward to engage the slots each in half dove-tail manner and then the arch is released so the two edges 18 and 19 enter into abutment.

By having through-holes in the sole part of the substructure it is possible to have robust protuberances and fasteners with a moderately inexpensive

moulding process. However it would be possible to have a multitude of miniature attachment means such as small members of small half-dove-tail nature to give equivalent strength without having through holes.

Whilst the previously described embodiments can be safely worn without any heel part upper with the instep upper part locating the wearer's heel on the heel of the substructure, it is possible to have a heel part upper either for decoration or for added safety. The present invention is basically for use with evening shoes wherein the heel part upper would be in the form of releasable straps. These straps can be attached releasably to the heel of the substructure as shown in figure 5 or figure 6. In Figure 5, the ends of the heel straps 31 have sewn into them rigid pins 32 which engage in holes 33 which are inclined upwardly into the substructure. Preferably each end has two pins joined together by a cross-bar in the manner of a staple. In Figure 6, the ankle strap 34 has attached to it a U-member 35 with one limb 36 attached to the strap by stitching or by adhesives whilst the other limb 37 co-operates with an angled hole 38 in the heel part of the shoe. Conveniently the limb 37 and the hole 38 are arranged so that the limb is inserted with strap not in its wear position and is then rotated so the strap assumes its wear position with the limb 37 held captive in the heel. Each end of each ankle strap would have its own member 35 and hole 38.

It would of course be possible to combine features described in relation to one embodiment with features described in relation to other embodiments.

#### CLAIMS

1. An article of footwear particularly a shoe for a lady which article consists of a substructure and an upper especially of straps in which the substructure has a raised heel platform and has secured to it a part insole flush with the raised platform, the instep of the upper being permanently attached to the part insole and the part insole being securely but releasably attached to the substructure.

2. An article according to claim 1 wherein the forward edge of the platform and the rear edge of the part insole are inclined so that the two edges engage in half dove-tail manner.

3. An article according to claim 1 or claim 2 wherein the insole engages the substructure by means of integral protuberances engaging in transverse slots, enlarged heads of the protuberances preventing the protuberances pulling out of the slots during wear but the slots having enlargements in a position such that the protuberances can be pushed through the slots and then slid along until the part insole is in the wearing position and the protuberances are fast in the slots, and the insole being prevented sliding relative to the substructure by contacting on an interface which is frictional or has undulations.

4. An article according to claim 1 or 2 wherein the insole is arranged to hinge down about the leading edge of the platform but is prevented from sliding along that edge and to be engaged by a detent towards the toe of the article.

5. An article according to claim 1 or claim 2 having a raised toe platform, the part insole being located

fore-and-aft between the two platforms and being located sideways by a detent.

6. An article according to claim 4 or claim 5 wherein the detent is manually engageable.

5 7. An article according to claim 6 wherein the detent engages in bayonet-like manner.

8. An article according to claim 1 or claim 2 wherein the part insole is engaged with the substructure by protuberances hooking into slots, the arrangement being such that the substructure has to be flexed to engage the protuberances in the slots.

10 9. An article according to any preceding claim wherein the edges of the platform and the part insole have provisions preventing the part insole being slid sideways.

15 10. An article according to any preceding claim having a heel portion of the upper which heel portion is secured to the substructure by means of pin-like fasteners fitting in holes which holes are inclined to render the pins or pin-like fasteners pulling free when the article is worn.

20 11. An article of footwear substantially as herein described with reference to Figure 1 and any one of Figures 2 to 4 of the accompanying drawings.

25 12. An article of footwear substantially as herein described and according to claim 11 having the heel upper attachment substantially as described herein with reference to Figure 5 or Figure 6 of the accompanying drawings.